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BEE KEEPING IN FLORIDA.*

By FRANK STIRLING

The keepers of bees in Florida find many reasons for engaging in this industry. Some engage in it solely for the honey produced and the financial gains resulting therefrom, while others, in fact a large majority, are in the business for the love of it. For some it is a recreation, and there is none better, as it gives delightful and absorbing occupation in the open air, and those who love natural science find no more fascinating problems than the ones still unsolved in the hive.

As a vocation it requires one's whole time and energy in order to insure success. Florida already has a large number of persons engaged in the bee industry whose yearly incomes vary from \$500 to \$5000. You will find bee keepers located in most all sections of the State, but most of them are at points where the pasturage for the bees is of the best; that is, where the plants grow which produce the most and best honey, such as the citrus grove sections on the east and west coasts, the swamps where great quantities of cabbage palmetto grow, and the north-western portions of the State where the tupelo and titi abound. Some bee keepers in Florida have several hundred colonies, but most of them keep only a few as a "side issue". Fifteen or twenty colonies may be managed with comparatively little time and attention, and if proper care be given to such an apiary it will prove profitable. If the season is favorable the product of one colony should net the owner from \$4.00 to \$10.00. For example, three years ago, from a small apiary of thirty-two colonies, the writer produced one ton of honey which sold at from ten to twenty-five cents per pound. It is not considered an exception for some colonies to produce as much as one hundred pounds of surplus honey during one year.

*Paper read before the Florida Entomological Society.

Of all the lower animals, bees are the most highly developed in certain ways, especially with regard to the spirit of communism, which is wonderful. One of the most remarkable peculiarities of bees, which is also shared by social insects such as ants, wasps and termites, is that there are three distinct kinds of individuals in the community, for in addition to the males and females which are the reproducing members of the colony, there is a third class which performs the labors of the community. These, commonly known as workers, are really undeveloped queens or unsexed females. In the termites the workers are both females and males.

The queen bee is the acme of a long period of development. She may actually be the mother of all her subjects. Too much care cannot be given to the selection of the queen, or mother bee, of the colony, for her blood is in their blood, her faults their faults, and her weaknesses their weaknesses. The mature or laying queen is a very graceful insect, her body is long and pointed and extends far beyond the tips of her closed wings. It requires about fifteen days for her to emerge from her cell after the egg has been laid. After several days she mates with a drone outside of the hive high up in the air on what is known as the "flight". During her life, which is sometimes less than a month, but generally two or three years, and occasionally more than five years, she mates with a drone only once.

Of all the inmates of the hive, the lot of the drones is the least enviable, for the reason that one only will fulfill the destiny as father of the hive; many are born only to be slain when the honey harvest is low. In appearance, the drone differs much from the queen and the workers. He is broad and the rear end of his body blunt. He is made for a life of idleness, his hind legs bear no pollen baskets, his tongue is so short that he could not reach the nectar inside the blossoms even if he wanted to do so, and he has no wax glands such as the worker has for secreting wax, and he cannot fight his enemies because he has no sting. His only accomplishment is his buzz. He generally lives until the workers decide they cannot afford to keep him any longer. In a queenless colony he may live six months.

In the bee community all the work is carried on by neuters, or unsexed females. The life history of the worker is usually as follows: The cell in which she is developed is the smallest of

those composing the honeycomb. In twenty-one days from the time the egg is deposited the worker emerges a fully developed bee ready to do the work of tending the larvae, gathering pollen and nectar from the field, and also acting in the capacity of guardian to the hive. The life of the worker during the busy season is usually about six weeks. However, those born in the late fall live through until the following spring. Very few die in the hive, especially during the busy season, as their wings wear out while flying to and fro and they drop to the ground. They apparently never rest when there is a good flow of nectar from the flowers, for during the day they are engaged in gathering the harvest, and all night long they work in the hive secreting wax, which is necessary to build the honeycomb; and by keeping a constant circulation of air thruout the hive by means of their wings, they evaporate the moisture from the sweetened water, which is known as nectar, until nothing is left but the honey. In other words, while the bees gather nectar, they make the honey.

In these troubled times, when we are all urged to do our "bit" ("best") in the great struggle for universal peace, when the farmer especially is asked to make his acres produce their maximum, there is nothing that can add to the general supply more than almost any kind of sweetening.

The production of honey, bee keeping, has always been quite an industry. Long before the dawn of history honey was used and prized highly as food. This valuable sweet, to the ancients of our race, was a perfectly concentrated sweetening ready for immediate use without any preparation. The first mention of this ready-made sweet in history is in Genesis, fourteen, eleven. "Take of the best fruits in the lands in your vessels, and carry down the man a present, a little balm and a little honey."

One who is well versed in the science of bee keeping, while traveling through the State of Florida, may see the enormous waste of the thousands of acres of flowers of numerous kinds. What I mean is that just about one per cent of the nectar produced by these flowers is being harvested by the honey bees. The census reports but \$100,000.00 worth of honey produced annually in Florida, and there could easily be \$1,000,000.00 worth produced if enough bees were on the job and handled properly by competent bee keepers.

Wild bees are common and the cutting down of bee trees with

their stores of honey is not infrequent. Several years ago I cut down four bee trees during one morning, securing therefrom about one hundred pounds of honey. If bees do so well wild, it is certain that by intelligent effort the honey production here in Florida could be made profitable. In California, where conditions for honey making are no better than here in Florida, in my opinion not nearly so good, there were produced in 1915, 600 car loads, or 15,000,000 pounds.

Most people have the idea that honey can be used only as syrup or in the comb to be eaten raw. Experts in nutrition in the United States Department of Agriculture have gone fully into the subject, and declare that with butter at forty cents a pound, a pound of honey at seventeen cents will be found equally economical as a source of energy. You can get the Department's Bulletin No. 653 entitled "Honey and Its Use in the Home", which is free, by writing to the U. S. Department of Agriculture at Washington. Information can also be secured from Wilmon Newell, Plant Commissioner, Gainesville, Florida, who has had a wide experience in bee culture.

Bees serve a good purpose besides the production of useful food. They are essential to the proper pollination of fruit trees. It is a well known and long established truth that the nectar, odor and bright color of the flowers are simply means of attracting insects in order that the fertilizing pollen may be carried from flower to flower. The honey bee is chief among insects for this purpose. It is the most easily controlled of all insects to do this necessary work.

It is of interest to know that Florida holds the world's honey producing record. In support of this claim I will quote from a report by P. J. Wester, formerly horticulturist of the U. S. D. A. Plant Introduction Station at Miami but now horticulturist of the Philippine Bureau of Agriculture, as follows: "It is worthy of note that the world's record for honey production is held by the sub-tropical state of Florida. The 103 colonies of an apiarist there, known to the writer, averaged about 298 pounds of honey per colony one year, and one produced the astonishing amount of 496 pounds."

The average yield per colony for Florida for 1917 was 86 pounds, which was almost twice the amount per colony produced in most of the other states during the same year. So the man in Florida who has a hive of bees, **especially at the present time**, is not likely to get "stung".